

What is Claim d is:

1. A method for controlling or altering growth characteristics of a plant cell which comprises introducing into a plant cell a cyclin-dependent kinase inhibitor (CKI).

2. A method for controlling or altering growth characteristics in a plant which comprises introducing into a plant cell a nucleic acid molecule encoding a cyclin-dependent kinase inhibitor (CKI) under the control of a regulatory sequence which controls expression of the cyclin-dependent kinase inhibitor and regenerating a plant therefrom.

3. A method for controlling or altering division in a plant cell which comprises introducing into a plant cell a cyclin-dependent kinase inhibitor.

4. A method for increasing the level of cyclin-dependent kinase inhibitor in a plant cell which comprises introducing into a plant cell a cyclin-dependent kinase inhibitor.

5. A method for increasing the level of cyclin-dependent kinase inhibitor in a plant cell which comprises introducing into a plant cell a nucleic acid molecule encoding a cyclin-dependent kinase inhibitor under the control of a promoter which functions in plants.

6. A method for modifying plant cell size which comprises introducing into a plant cell a cyclin-dependent kinase inhibitor.

7. A method for modifying plant cell size which comprises introducing into a plant cell a nucleic acid molecule encoding a cyclin-dependent kinase inhibitor under the control of promoter which functions in plants.

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8. The method of claim 7 wherein the plant cells are cells in the floral petal.

9. The method of claim 7 wherein the plant cells are cells in the leaf.

10. The method of claim 7 wherein the plant cells are cells in the stem.

11. A method for modifying cell number in a plant which comprises introducing into a plant cell a nucleic acid molecule encoding a cyclin-dependent kinase inhibitor under the control of a promoter which functions in plants and regenerating a plant with modified cell number.

12. The method according to claim 6, 7, 8, 9 or 10 wherein plant cell size is increased.

13. The method according to claim 11 wherein the cell number is decreased.

14. A method of altering leaf shape in a plant which comprises introducing into a plant cell a nucleic acid molecule encoding a cyclin-dependent kinase inhibitor under the control of a promoter which functions in plants and regenerating a plant therefrom having altered leaf shape.

15. A method of altering leaf size in a plant which comprises introducing into a plant cell a nucleic acid molecule encoding a cyclin-dependent kinase inhibitor under the control of a promoter which functions in plants and regenerating a plant therefrom having altered leaf size.

16. The method of claim 14 wherein the regenerated plant has leaves which are more highly serrated compared to wild type plants.

17. A method of increasing stomata size of a plant which comprises introducing into a plant cell a nucleic acid molecule encoding a cyclin-

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dependent kinase inhibitor under the control of a promoter which functions in plants and regenerating a plant therefrom having increased stomata size.

18. A method of increasing gas exchange and photosynthesis in a plant which comprises introducing into a plant cell a nucleic acid molecule encoding a cyclin-dependent kinase inhibitor under the control of a promoter which functions in plants and regenerating a plant therefrom having increased gas exchange and photosynthesis.

19. A method of altering tissue or organ shape in a plant which comprises introducing into a plant cell a nucleic acid molecule encoding a cyclin-dependent kinase inhibitor under the control of a promoter which functions in plants and regenerating a plant therefrom having flowers with altered petal shape.

20. The method of claim 19 wherein the tissue or organ shape is floral petal shape.

21. A method of altering tissue or organ size in a plant which comprises introducing into a plant cell a nucleic acid molecule encoding a cyclin-dependent kinase inhibitor under the control of a promoter which functions in plants and regenerating a plant therefrom having flowers with altered petal size.

22. The method of claim 21 wherein the tissue or organ size is floral petal size.

23. The method of claim 21 wherein the petal size is reduced compared to wild type plants.

24. The method of claim 19 wherein the promoter which functions in plants is a petal-specific promoter.

25. A method of altering the venation pattern in a plant leaf which comprises introducing into a plant cell a nucleic acid molecule encoding a cyclin-

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dependent kinase inhibitor under the control of a promoter which functions in plants and regenerating a plant therefrom having leaves with an altered venation pattern.

26. A method of facilitating the transition from the mitotic cycle to G1 arrest in a plant cell which comprises introducing into a plant cell a cyclin-dependent kinase inhibitor.

27. A method of facilitating the transition from the mitotic cycle to G1 arrest in a plant cell which comprises introducing into a plant cell a nucleic acid molecule encoding a cyclin-dependent kinase inhibitor under the control of a promoter which functions in plants.

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28. The method of claim 26 or 27 wherein said facilitating the transition from the mitotic cycle to G1 arrest in a plant cell results in a decrease in endoreduplication in the plant cell.

29. The method of claim 26 or 27 wherein said facilitating the transition from the mitotic cycle to G1 arrest in a plant cell results in a decrease in ploidy level in the plant cell.

30. A method of altering plant seed size which comprises introducing into a plant cell a nucleic acid molecule encoding a cyclin-dependent kinase inhibitor under the control of a promoter which functions in plants and regenerating a plant therefrom having decreased seed size compared to wild type plants.

31. A method of altering plant seed shape which comprises introducing into a plant cell a nucleic acid molecule encoding a cyclin-dependent kinase inhibitor under the control of a promoter which functions in plants and regenerating a plant therefrom having decreased seed shape compared to wild type plants.

32. A method of controlling a protein expression which comprises introducing a nucleic acid molecule encoding a protein or the control of a protein expression thereof with decreased expression level into a cell.

33. A method of controlling a protein expression which comprises introducing a nucleic acid molecule encoding a protein or the control of a protein expression thereof with decreased expression level into a cell, wherein the nucleic acid molecule is a viral vector.

34. A method of controlling a protein expression which comprises administering a nucleic acid molecule encoding a protein or the control of a protein expression thereof to a CKI or a homolog thereof for a time period.

35. A method of controlling a protein expression which comprises administering a nucleic acid molecule encoding a protein or the control of a protein expression thereof to or expressing antibody against a protein or the control of a protein expression thereof.

36. A transgenic plant, plant part, or plant cell wherein a nucleic acid molecule encoding a protein or the control of a protein expression thereof is heterologous to the genome of the plant, plant part, or plant cell.

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34. A method of modulating the level or activity of a CKI in a plant which comprises administering or exposing cells, tissues, seeds, or organs of the plant to a CKI or a homologue, analogue, derivative or immunologically active fragment thereof for a time sufficient to modulate the level or activity of the CKI.

35. A method of modulating the level or activity of a CKI in a plant which comprises administering or exposing cells, tissues, seeds, or organs of the plant to or expressing antibodies against CKI in the cells of a plant

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the transgenic plant, plant part or plant cell by recombinant DNA means.

37. The transgenic plant of claim 36 having altered growth characteristics.

38. The transgenic plant of claim 36 having altered leaf shape.

39. The transgenic plant of claim 36 having altered leaf size.

40. The transgenic plant of claim 36 having leaves which are more highly serrated compared to wild type plants.

41. The transgenic plant of claim 36 having leaves which are more deeply lobed than wild type plants.

42. The transgenic plant of claim 36 having flowers with altered petal shapes.

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(En) 48. The transgenic plant of claim 36 having flowers with altered petal size.

44. The transgenic plant of claim 36 having an altered venation pattern.

45. The transgenic plant of claim 36 having cells with altered ploidy levels.

~~46. The transgenic plant of claim 37 wherein the cells have an decreased ploidy level.~~

Sub E187 47. The transgenic plant of claim 36 having altered seed size.

48. The transgenic plant of claim 36 wherein the total cell number of the plant is decreased.

1. The first part of the paper is devoted to the study of the asymptotic behavior of the solutions of the system (1) as $t \rightarrow \infty$. It is shown that the solutions of the system (1) tend to zero as $t \rightarrow \infty$ if and only if the matrix A is stable.

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49. The transgenic plant of claim 36 comprising cells of increased size.

50. The transgenic plant of claim 36 comprising leaves with increased stomata size.

51. The transgenic plant of claim 36 having increased photosynthetic capacity.

52. The method of claims 1-11, 13-27, or 30-36 wherein the CKI comprises the amino acid sequence as set forth in any one of SEQ ID Nos:2, 4, or 6.

53. The method of claims 2, 5, 7, 8, 9, 10, 13-27, and 30-35 wherein the nucleic acid molecule comprises the nucleotide sequence as set forth in any one of SEQ ID NO:1, 3, or 5.

54. The method of of claims 1-4, 13-27, 30-36 wherein the CKI comprises the consensus amino acid sequence as set forth in any one of SEQ ID NO:34, SEQ ID NO:35, SEQ ID NO:36, SEQ ID NO:37, SEQ ID NO:38 or ~~SEQ ID NO:39.~~

55. The transgenic plant of claim 36 wherein the CKI comprises the consensus amino acid sequence as set forth in any one of SEQ ID NO:34, SEQ ID NO:35, SEQ ID NO:36, SEQ ID NO:37, SEQ ID NO:38 or SEQ ID NO:39.

56. Harvestable parts or propagation material from the transgenic plant of claim 36.

57. Out flowers from the transgenic plant of claim 36.

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(59) A peptide having any one of the consensus sequences as set forth in SEQ ID NO:34, SEQ ID NO:35, SEQ ID NO:36, SEQ ID NO:37, SEQ ID NO:38; or SEQ ID NO:39.